Conference of
New England Governors
and
Eastern Canadian Premiers

Implementation of the

Conference of New England Governors
and Eastern Canadian Premiers

Mercury Action Plan

A Report of the

NEG/ECP Committee on the Environment

Submitted to the

26th Conference of New England Governors
and Eastern Canadian Premiers

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FORWARD

In June 1998, the Conference of New England Governors and Eastern Canadian Premiers (NEG/ECP) adopted the landmark *Mercury Action Plan (MAP*), which specifies actions to protect its citizens and its environment from the toxin mercury. The MAP was organized into 6 broad action categories including a Mercury Task Force (MTF), source emission reduction, pollution prevention and waste management, research and monitoring, education and outreach, and mercury stockpile management. The Plan provides the New England states and Eastern Canadian provinces with a coordinated and powerful set of tools to reduce anthropogenic releases of mercury in our region and remove mercury from our waste streams.

Since the adoption of the Plan, representatives of state and provincial environmental agencies on the Mercury Task Force, in conjunction with partnering organizations including the U.S. Environmental Protection Agency, Environment Canada, Northeast States for Coordinated Air Use Management (NESCAUM), the Northeast Waste Management Officials' Association (NEWMOA) and the Commission for Environmental Cooperation (CEC), have aggressively implemented the spirit and commitments of the Plan. Under the direction of the NEG/ECP Committee on the Environment and reporting to the Secretariats of the NEG/ECP and the Coordinating Committee on the Conference, the Mercury Task Force focused its efforts in the first two years on the major mercury emission sources in our region, and have reported on considerable success in addressing these sources at the last two meetings of the Conference of New England Governors and Eastern Canadian Premiers.

The Mercury Action Plan is a historic undertaking in the area of progressive bi-national environmental policy-making at the jurisdictional level. The Plan has earned commendations from numerous groups and has served as a model for other regional and international efforts, such as the CEC's North American Regional Action Plan (NARAP) on Mercury.

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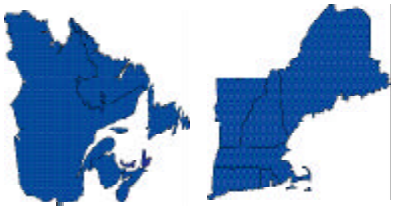
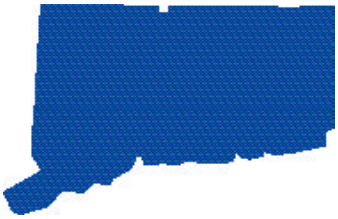


The Conference of New England Governors and Eastern Canadian Premiers adopted its historic Mercury Action Plan in June 1998, at its meeting in Fredericton, New Brunswick. Since that time, this document has served as a model for other multi-jurisdictional efforts in this area, such as the CEC's North American Regional Action Plan (NARAP) for Mercury.

Connecticut



'2001 in 2001'

The state of Connecticut announced an ambitious goal of collecting 2,001 pounds of mercury by the fall of 2001. This target is on its way to being achieved through a statewide series of school sweeps, thermometer exchanges, dairy manometer collections and other activities.

EXECUTIVE SUMMARY

In addition to continued work to implement the region's aggressive mercury emission reduction policies, over the past year the Mercury Task Force and its partnering agencies have focused considerable efforts on the MAP action categories relating to education and outreach, pollution prevention, research and monitoring, and advocating for mercury stockpile management. These efforts are the focus of the first portion of this report, which addresses regional activities in the third year of the Plan's implementation (July 2000 to August 2001). A brief update of ongoing emission reduction activities and accomplishments is then presented. Lastly, in order to motivate regional actions and provide an additional milepost to evaluate progress, a new interim reduction goal for the year 2010 is discussed.

In the outreach and education area the jurisdictions have focused on such activities as increasing public awareness of fish consumption advisories, particularly with respect to sensitive populations; working with the healthcare sector, including hospitals and dental offices, to reduce mercury releases and use; increasing local efforts to divert mercury from the waste stream through source separation and recycling; and working with schools to eliminate mercury hazards in the classroom. Pollution prevention activities have focused on significant efforts to address the mercury content of consumer and commercial products through implementation of state legislation and through development of the Canada-Wide Standards. Mercury collection programs and thermometer exchanges have also contributed to successful efforts to reduce the mercury burden in the solid waste stream as well as educate the public about mercury.

Research and monitoring were also a focus of this past year's implementation activities. Some of these activities included evaluating innovative technologies related to mercury monitoring and reduction and developing a set of regional environmental indicators in order to evaluate progress in addressing the mercury problem. Included in this report is a brief summary of the work of the Fish Tissue Workgroup of the Mercury Task Force. This group has compiled a matrix of jurisdictional fish tissue sampling protocols and practices, and a short report summarizing the issue and recommending further cooperation on this topic.

Ongoing efforts to address the major sources of mercury emissions in the region, including municipal waste combustors, medical waste incinerators and utility boilers are also described in the Year Three Report. Last year, the MTF estimated that actions underway at that time would result in a 40% or greater reduction in regional mercury emissions by 2003. The jurisdictions have continued to make substantial

progress in this area and the MTF currently estimates that regional mercury emissions will be reduced between 50% and 55% by 2003, exceeding the MAP interim reduction goal. Major reductions from the region's biggest sources have been achieved, in many cases ahead of schedule. Over the past year, municipal waste combustor facilities across the region have installed new state-of-the art pollution control equipment to address mercury emissions. As a result of these new controls, combined with mercury source separation and source reduction efforts to get mercury out of the municipal waste stream, these facilities are now meeting, and in most cases, exceeding the required emission limits for mercury. This has resulted in substantial reductions in mercury emissions, which were achieved well ahead of the schedule in the Plan. Mercury emissions from medical waste incinerators have also been substantially reduced. Other regional sources of mercury releases are being addressed including utilities, wastewater discharges and releases attributable to broken and disposed mercury-added products.

Finally, Year Three efforts have also included activities which focus on advocating for the safe management of mercury stockpiles at the federal level and dealing with the issue of safely "retiring" excess mercury.

One important recommendation of the NEG/ECP Mercury Task Force and Committee on the Environment contained in the Year Three report is the establishment of a new interim reduction goal of 75% or greater by 2010, based on the 1998 inventory of mercury emissions in our region. With the Plan's short-term goal of a 50% emission reduction target from identified sources by 2003 expected to be achieved on-schedule or earlier, a new goal is now needed to serve as an aggressive next step towards the virtual elimination target established in the MAP. The rationale for this target is set forth in this report.

The Year Three report is in no way intended as a comprehensive review of the ongoing efforts in the region that are being implemented in conjunction with the *Mercury Action Pla*n. Rather, this report provides a snapshot of some of the important activities taking place in the states and provinces and the high level of involvement and coordination of the jurisdictions in our region.

The second part of this report is a brief review of the work priorities for the coming year, Year Four, as identified by the Mercury Task Force under the direction of the Committee on the Environment. These include continuing the work of the Joint Boiler Workgroup (a partnership of the Mercury Task Force and Acid Rain Steering Committee) to achieve the goals set forth by the group in its report to the Conference last year. The Task Force is also directed to begin development of an updated inventory of mercury emissions in the region, assess the status

New Brunswick

'New Brunswick Mercury Reduction Strategy"

New Brunswick recently completed its 'Mercury Reduction Strategy', which outlines policies and programs for further reducing mercury emissions and other issues.

Maine

'Waste Collection Program'

The Maine Department of Environmental Protection and the State Planning Office have worked on infrastructure development to collect and properly manage universal wastes and mercury-added poducts. By late Summer 2001, approximately 45 sheds of various sizes will be located throughout the state to collect universal wastes and mercury. These sheds were funded through a one-time allocation from the Maine State Legislature.

and needs of the regional mercury monitoring network, and explore options for scientific and policy workshops on important topics such as mercury retirement.

As the *Mercury Action Plan* enters its fourth year of implementation, the NEG/ECP Committee on the Environment reports to the 26th Conference of New England Governors and Eastern Canadian Premiers that not only has major progress been made in reducing the emissions of mercury in our region and the threat of this toxin to our citizens and our environment, but that the Plan will continue to be aggressively implemented throughout our region.

PROPOSED 2010 REGIONAL MERCURY REDUCTION GOAL

In June 1998 the New England Governors and Eastern Canadian Premiers (NEG-ECP) adopted a regional Mercury Action Plan with a long-term goal of virtually eliminating mercury emissions in the region. The plan also established an intermediate goal committing to actions to reduce regional mercury emissions by 50% by 2003. This intermediate goal has provided an important benchmark to motivate and track progress towards virtual elimination.

At their September, 2000 meeting in Massachusetts, the New England Governors Conference, Inc. asked its state Mercury Task Force (MTF) representatives to work with their Canadian colleagues to evaluate post 2003 mercury reduction targets and timelines. Specifically, the resolution set forth the following charge:

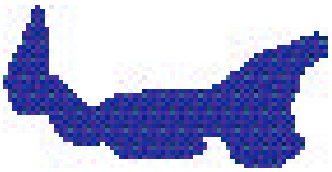
> *"that in an effort to continue toward the goal of virtual elimination of anthropogenic mercury as expeditiously as feasible, the NEGC directs its Committee on the Environment and the New England members of the NEG/ECP Mercury Task Force to work with their Eastern Canadian counterparts to evaluate new reduction targets beyond the 50% reduction by 2003 and to report to the next meeting of the Conference of New England Governors and Eastern Canadian Premiers about specific targets and timelines to be achieved between now and 2010";*

As requested, the joint NEG/ECP Mercury Task Force has evaluated this issue and recommends the adoption of a post-2003 interim reduction target of 75%, or greater, by 2010 with a mid course reevaluation in 2005 to allow for new information to be considered. The MTF relied upon two basic principles in developing this proposal. These were that the new reduction goal should be *challenging* but also be *feasible* to achieve. The MTF believes that this reduction target and timeline is consistent with both of these principles.

Proposed Language for 2010 Regional Mercury Reduction Goal:

> ***By 2010, the jurisdictions will identify and implement actions to achieve an overall 75%, or greater, reduction in anthropogenic mercury releases to the environment from regional sources, based on the emission inventory presented in the 1998 Northeast States and Eastern Canadian Provinces Mercury Study. This regional goal will be re-evaluated in 2005 to allow for new data on emissions, control options and other factors to be taken into account, and the target will be revised if necessary to reflect this new information.***

Prince Edward Island



'Waste Watch'

Prince Edward Island's highly successful Waste Watch program, which collects and separates wastes into recyclables, compostables and waste, is being expanded beyond the Charlottetown area to include the entire province.

Vermont

'Thermometer Collection Program'

Vermont conducted a two-week fever thermometer exchange across the state, distributing 33,000 digital thermometers through pharmacies. Nearly 100 pounds of mercury was collected from 45,000 mercury fever thermo-meters and other items.

Basis for the Recommendation:

The recommended reduction target is based on an analysis by the NEG/ECP Mercury Task Force. Potential emission reductions for identified sources of mercury were estimated, using the regional emission inventory presented in the1998 Northeast States and Eastern Canadian Provinces Mercury Study as a baseline. This analysis indicates that it should be possible to reduce anthropogenic releases of mercury to the environment by 75% by 2010. The reductions will, however, be challenging, necessitating continued aggressive actions to reduce mercury releases from remaining sources. Adoption of this reduction target will help to ensure continued progress towards the ultimate goal of virtually eliminating anthropogenic mercury releases in the region. Reductions in excess of 75% are possible but would require substantial reductions from sources such as residential oil heat, which are not deemed feasible by 2010. Excluding this source, the proposed reduction target equates to an overall reduction in emissions from other sources in excess of 84%.

The goal of virtually eliminating mercury releases within the region will continue to be the ultimate objective of the NEG-ECP Mercury Action Plan. Although it is anticipated that virtual elimination of mercury releases will be achieved from many of the major sources in the region before 2010 (e.g. medical waste incinerators), the virtual elimination of releases from other sources, such as oil boilers used for residential heating, is unlikely to be achievable within that timeframe. Although individual units are small sources of mercury emissions, as a group oil-fired residential heating units were estimated to be a significant overall emission source in the 1998 Regional Mercury Study. Such boilers are a difficult source to address because of their sheer number, small size, lack of viable control options and the regional dependency on oil boilers for basic heat. At this time, options for reducing emissions from these diverse and small sources have not been well evaluated. Thus, there is little "visibility" regarding the potential timeline for future regional reductions from this category. Possible ways to reduce emission from these sources include energy conservation, fuel switching to natural gas, other alternative energy sources and potential options to reduce the mercury content of fuels. Further national and regional efforts in these areas are needed. In conclusion, because of these factors, establishing a defensible date certain for achieving virtual elimination of mercury releases in the region is not possible at this time.

The re-evaluation called for in 2005 will allow for the incorporation of new information on regional mercury sources and reduction options, including residential heating, using data that will be derived as part of the update of the regional emissions inventory. The re-evaluation will allow the MTF to revisit the 2010 target and adjust it if necessary.

OUTREACH AND EDUCATION

Overview:

Substantial regional efforts to implement the Mercury Action Plan over the past year were focused on education and outreach programs. These programs followed the Regional Mercury Communications Strategy developed by the MTF and approved by the Environment Committee last year. The overall goals of this Strategy are to enhance the implementation of the Mercury Action Plan by raising public awareness of mercury issues, including fish consumption advisories, informing and educating key target audiences about environmentally preferable alternatives to mercury containing products and about proper disposal and safe handling options, developing broader support for the Plan, and advocating for further national and international actions.

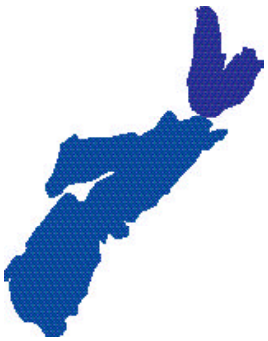
The Strategy is being implemented on a jurisdictional basis to allow for messages to be customized to better reach and meet the unique education needs of the region's diverse target audiences and to take advantage of multiple and differing communication channels. The MTF has provided the mechanism to share information and experiences about successful programs and challenges, as well as to coordinate programs to enhance the consistency of messages being communicated to the public.

All jurisdictions are implementing education programs designed to inform the general public and other affected parties about mercury, focusing on those elements noted previously. In addition to the general public, programs have been instituted to reach sensitive populations including women of childbearing age, children, and native peoples, and non-English speaking peoples in New England. Efforts have been made through the MTF to expand coordination and interactions regarding mercury outreach and education initiatives between the jurisdictions' Public Health and Environmental Departments.

Through outreach efforts to businesses and organizations that use mercury or come in contact with the toxin – such as schools, hospitals, dental offices, recyclers, waste handlers and many others – jurisdictional programs have been developed to reduce mercury use, remove mercury from waste streams and ensure that individuals are not accidently exposed to mercury.

The following sections, organized loosely by target audience, summarize some of the education and outreach initiatives underway in the region. Because of the breadth and scope of these efforts in the New England states and Eastern Canada provinces, the programmatic examples provided below are presented as a snapshot overview of regional activities - they are by no means exhaustive nor are the program descriptions

Nova Scotia



'Health Facility Program'

Nova Scotia will extend the successful mercury management program at the Cape Breton Regional Health Care Complex to all other provincial hospitals. Partnering with Environment Canada, mercury use and policies related to mercury use, handling and disposal will be assessed and appropriate changes introduced. This program will include sampling for mercury in hospital sanitary sewers.

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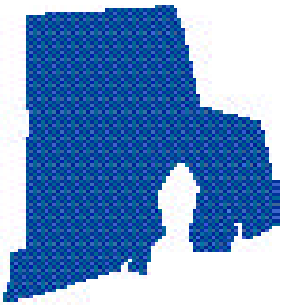
Rhode Island



'Mercury Legislation'

Rhode Island passed historic mercury education and reduction legislation (S-0661 & H-6161) that is intended to provide a framework for Rhode Island to minimize mercury in products sold and distributed in the state, and manage mercury-containing wastes.

comprehensive. More detailed information on specific programs can be obtained from the individual jurisdictions. In addition to this summary report, examples of outreach and education materials being used in the region will be either distributed or displayed at the NEG/ECP meeting. These will include a selection of the following: digital thermometers with accompanying mercury brochures; fish consumption advisory information; promotional items such as mercury awareness magnets and pencils; fact sheets; posters; displays; videos and written articles.

Program Summaries

The states and provinces have developed and utilized numerous communication mechanisms and media for increasing the public's awareness of mercury as a toxin, how to properly dispose of mercury-containing products, and how to safely handle them, as well as what to do in the event of an accidental spillage of mercury (such as from a broken thermometer). These include television and radio spots, newspaper advertisements, brochures, web pages, special events, school programs, outreach through specialized channels such as the medical community, linked pollution prevention and education programs such as thermometer exchanges; and toll-free mercury numbers. The following sections briefly summarize regional outreach and education efforts by target audience.

The General Public:

Examples of states and provinces reaching out to the public to build mercury awareness are numerous. Many states and provinces are implementing extensive outreach and education programs as an integral part of their jurisdictional mercury strategies. A few specific examples of such outreach efforts follow.

As part of New Hampshire's state-wide mercury outreach program, an "Ecowatch" television piece describing the hazardous nature of mercury and proper management of mercury containing wastes was produced in collaboration with a local television station and aired statewide. New Hampshire has also developed a series of fact sheets for individuals on mercury and has written several newspaper articles for the general public.

Prince Edward Island has printed a number of mercury-related articles in local newspapers, and Newfoundland's 'Mercury Fact Sheet' explains mercury sources, transport and detrimental impacts on human health. New Brunswick developed and published an article about mercury in the Gulf of Maine newsletter.

Massachusetts has established a hotline (1-866-9 MERCURY) to provide the public with information on mercury. Massachusetts is also implementing a statewide Mercury Awareness Campaign. This is a

multi-agency effort including radio spots to educate the public, businesses, sensitive populations and municipal officials about mercury. The campaign includes special events such as Mercury Awareness Day at the New England Aquarium and a press event on the State's Zero Mercury Strategy at Walden Pond.

Rhode Island, which recently passed comprehensive mercury products legislation, will be instituting outreach programs in support of the legislation and to increase public awareness about mercury.

In addition to these efforts, the jurisdictions have also developed a number of mercury displays appropriate for different target audiences. These are being used to educate the public about mercury at special events. A few examples of these displays will be shown at the NEG/ECP meeting in August, 2001.

The internet has proven to be another highly effective tool for disseminating information on mercury issues. All the jurisdictions in the region currently have mercury information available on websites. In addition, Environment Canada is currently developing a dedicated mercury site, and the U.S. EPA (New England) mercury website is operational. Linkages between jurisdictional sites within the region, interstate sites such as the Northeast Waste Management Officials' Association (NEWMOA) webpage, focusing on mercury pollution prevention, and national sites, facilitate public access to the large body of information available on mercury.

These efforts and similar ones in other states and provinces are increasing the general public's knowledge of mercury in their daily lives, and support other outreach programs targeting specialized audiences that are discussed below. In particular, building grass-roots awareness of mercury facilitates many of the mercury source separation and pollution prevention programs the jurisdictions are undertaking. In turn these programs provide a mechanism to reach key target audiences and to distribute more detailed or specialized educational materials. Among such programs are the thermometer exchanges note above, household and business hazardous waste collection programs and events, hospital and healthcare facility mercury programs, dental programs (described in more detail later in this report), and school mercury clean-outs.

Thermometer Exchange Programs:

Thermometer exchange programs, in which mercury-containing thermometers are exchanged for non-mercury thermometers, are being implemented by most jurisdictions and have been extremely successful outreach and education vehicles in our region. For example, Vermont and Connecticut have closely linked their outreach and education efforts to the general public with thermometer exchange programs. This has

Quebec

'Dental Mercury Program'

The Montreal Urban Community has developed an innovative and successful program with its dental facilities to reduce the amount of mercury released into the community's waste water by dental offices. It includes regulations promoting the most recent technologies for dental waste water treatment and mercury capture.

Massachusetts

'Zero Mercury Strategy'

The Massachusetts Executive Office of Environmental Affairs (EOEA) has been agressively implementing a statewide, multi-agency Zero Mercury Strategy. As a result of the Strategy, the public in the state is now better informed about mercury, over 2,000 pounds of mercury was recycled, emissions from incinerators were reduced over 95%, and a strategic environmental monitoring program was established.

proven to be an excellent mechanism to both collect mercury and educate the public. In Vermont's program, 45,000 thermometers were collected containing over 100 pounds of mercury. In addition to reducing the risk of accidental breakage, with resulting environmental releases and the potential for exposures in the home, this program was also a highly successful educational vehicle. Vermont used the exchange program as a mechanism to distribute a mercury educational brochure, reaching a significant percentage of Vermont's population. Vermont has also developed mercury product board displays and informational materials, which have been displayed or handed-out at numerous State House, home show and business show events throughout the state. Among other efforts, the Connecticut statewide mercury education campaign has included a television ad on mercury and a large replica of a thermometer in front of the DEP offices, used as a mechanism to communicate to the public about the amount of mercury recycled through the state's thermometer exchange and mercury collection program. In part based on the success of these programs Massachusetts, New Hampshire and Maine are also implementing thermometer exchange programs.

Municipalities:

Many jurisdictions are implementing programs to educate municipal officials and assist them in outreach efforts to our citizens about mercury. Other collection programs have also been used to conduct outreach and education at the municipal level. For example, Maine sponsors workshops for municipalities on mercury waste issues; Massachusetts provides assistance to municipalities to provide outreach to citizens; New Hampshire encourages municipalities to provide outreach about their collection activities and provides one half the funding for local collection campaigns.

Fluorescent lamps, if not disposed of properly, can break and emit mercury into the environment. In Nova Scotia, outreach efforts have focused on keeping such lamps out of solid waste. Prince Edward Island is also working with its Island Waste Management Corporation and Newfoundland with its Interdepartmental Recycling Committee to address this mercury source, including outreach efforts.

Outreach efforts have also been implemented on collection programs for other products that contain mercury. For example, Vermont, Connecticut, and Maine have programs to recover and remove mercury from dairy manometers.

Hospitals and the Health Care Sector:

Hospitals and health-care facilities have traditionally used mercury-containing products, such as thermometers and other instruments. The eleven states and provinces have all engaged their health care facili-

ties in dialogues and programs to remove or substitute mercury-containing products, manage mercury wastes and train staff in proper handing and disposal techniques. Mercury reduction workshops in New Hampshire co-sponsored by the state's Hospital Association and Nova Scotia's 'Operation Green' (which audited healthcare facilities for mercury use and led to new mercury procedures and policies) are two examples of this type of outreach in our region. The Montréal Urban Community has initiated cooperative efforts with the Québec Department of Public Health to address mercury in the Community's hospitals. Massachusetts state hospitals are working to educate facility managers and purchasing agents to reduce the use of mercury containing devices. Maine has also partnered with the Maine Hospital Association to develop Pollution Prevention Plans and to conduct mercury awareness training. Also, the U.S. EPA's 'Mercury Challenge' for hospitals has involved numerous hospitals in the region.

Dentists Offices:

The use of dental amalgams in fillings and other dental work results in significant mercury discharges into waste-water. Programs are in-place or being developed throughout the region to educate the dental community about the environmental hazards of mercury, approaches to minimizing mercury releases, available options to collect and properly dispose of mercury in dental offices, and non-mercury alternatives to mercury-containing amalgams. A Memorandum of Understanding (MOU) between Nova Scotia and the provincial dental association has promoted the collection and recycling of mercury in that province. Vermont, in cooperation with the National Wildlife Federation and the state's Dental Association, has developed a Best Management Practices guide for dental offices. Massachusetts also has instituted an elemental mercury collection program through a cooperative program with the Massachusetts Dental Society and Stericycle, Inc, which has collected over 1,600 pounds of mercury from dental office in the state. The Massachusetts MOU with the state's Dental Society commits to cooperative efforts between the dental society and state environmental agencies to educate dentists about best management practices and to evaluate technology options for removing mercury from wastewater. Other states have also distributed Best Management Practices information to dentists; Maine and New Brunswick are working with their dental community to develop and provide outreach to dentists on mercury pollution prevention plans and best management practices.

Schools:

Schools have long used mercury in their science curriculums, and as a result have been sources of accidental spills, often resulting in costly clean-up efforts and unnecessary exposures to mercury in the classroom. The region has undertaken a number of programs to educate school

Newfoundland and Labrador

'Science Safety Resource Manual'

The provinces Department of Education played a lead role in the development of the "Science Safety Resource Manual", which addresses mercury spills, exposure and storage. The document also lists all compounds of mercury, excluding encapsulated elemental mercury, as chemicals that should not be present in school laboratories.

New Hampshire

'Medical Waste Incinerator Emissions Reductions'

As of April 10, 2001 all medical waste incinerators were required to be in compliance with New Hampshire's Hospital Medical Infectious Waste Incinerator (HMIWI) Rule. Prior to adoption of the rule, which sets a .055 mg/dscm mercury emissions limit (ten times more stringent than the federal limit), there were thirteen medical waste incinerators operating in the state. Implementation of the HMIWI rule resulted in the closure of eleven incinerators and a 98% reduction in mercury emissions from these sources.

personnel and students about mercury, to remove mercury from school science programs and to organize 'clean-outs' of elemental mercury. Vermont has implemented a 'School Science Lab Chemical and Mercury Clean-out Program'. As part of this program all schools will have completed two day-long training sessions, including information on mercury. Over 625 pounds of mercury from 83 participating schools have been collected as a result of this program. Newfoundland helped develop a 'Science Safety Resource Manual' for schools that addresses mercury spills, exposure and storage. Connecticut has performed school clean-outs at twenty schools, New Brunswick and Nova Scotia has removed mercury from their schools and revised curriculums accordingly, and Prince Edward Island has developed a Mercury Management Plan for Schools. New Hampshire and Massachusetts environmental agencies are working with their state Department of Education to eliminate mercury in schools. Massachusetts has completed cleanouts on 30 schools, plans to complete an additional 50 this next year and has also developed educational materials on mercury for use in school classrooms. Maine has also developed training materials for school personnel about mercury and hazardous waste management.

Sensitive Populations: Fish Consumption Advisories:

Each jurisdiction in New England and Eastern Canada currently has in place some form of fish advisory program to alert fishermen and consumers of fish about hazardous levels of mercury. Certain populations, such as pregnant women and small children, are particularly at risk from elevated mercury levels in fish. With interagency funding from the Department of Environmental Protection, the Massachusetts Department of Public Health has expanded its efforts to educate the public about fish consumption advisories, including translations of its advisories and educational materials into several languages to better reach sensitive populations; public service announcements; focus groups; and adds on public transportation. Québec has updated the "Guide to Eating Sportfish" with the most recent data on mercury (and other targeted contaminants) in fish tissue, with information from over 600 surveyed lakes and streams. This information is also available on the website of the Quebec Ministry of Environment. New Hampshire produced a second Ecowatch television commercial concerning the states freshwater fish advisory. The Maine Department of Public Health has developed a very informative guide to mercury levels in various fish species in the state, which they will be sharing with other jurisdictions in the region. Because anglers may fish in many areas and fish consumers may vacation away from their home states, the Northeast States for Coordinated Air Use Management is working with regional Departments of Public Health and Environmental Agencies to develop a unified fish consumption brouchure alerting the public about the potential risks of mercury in fish and about national fish consumption advisories. The brochure also pro-

vides contacts for information on advisories in each state.

Commercial and Institutional Sectors:

Outreach to salvage yards, waste operators and recyclers has also been an important component of the regional strategy to address mercury in the waste stream. The proper removal and handling of mercury-containing auto switches is included in a Best Management Practices manual being developed in New Hampshire, and a similar document addressing appliances, entitled 'Household Appliance Mercury Switch Removal' is being drafted in Vermont. Two major vehicle fleets in Connecticut have agreed to collect mercury-containing switches in their vehicles and replace them with ball-bearing switches. A Waste Management Advisory Committee in Newfoundland has been tasked with addressing issues related to mercury-containing waste in that province. Massachusetts has completed a project targeting mercury switches in "white-goods." Vermont, Maine, New Hampshire and Rhode Island are implementing or developing outreach initiatives to the commercial sector about their resective mercury product legislation.

An important component of many programs is outreach and education to facility managers, operators and workers. Rhode Island has provided training for workers in the proper handling of mercury wastes as part of its hospital outreach efforts. Massachusetts has worked with federal facilities managers on a regional project funded by USEPA to survey and reduce mercury use, collect existing mercury inventory, and improve handling and disposal practices in federal buildings, as well as raise the awareness of mercury issues among building managers. New Hampshire has added information on mercury into the Solid Waste Operator Training Certification Program.

Conclusion:

In conclusion, this section has provided a snapshot of the spectrum and diversity of the extensive mercury outreach and education activities underway in the New England States and Eastern Canadian provinces. As noted earlier, in order to be brief, this summary was not intended to be all-inclusive; many programs have not been covered and descriptions of all have been abbreviated. The states and provinces have learned a great deal from each other about successful (and some unsuccessful) activities, and continue to share important information about their programs with each other allowing them to be adapted to meet individual jurisdictional needs and practices.

MERCURY SOURCE REDUCTION & SAFE WASTE HANDLING

Introduction and Overview

During the past year, the New England states and Eastern Canadian provinces have initiated a number of successful programs to reduce mercury releases attributable to products. These efforts are consistent with the report endorsed at last year's NEG/ECP meeting in Halifax, N.S. Mercury-containing products, including fever thermometers, thermostats, fluorescent light bulbs, switches, dairy manometers, button cell batteries, and medical devices are pervasive in municipal solid waste. To address the environmental problems associated with mercury in products, the states and provinces have undertaken many types of programs. These have included:

- source separation and mercury collection initiatives for mercury-added products, including pro grams through household hazardous waste collection centers;
- coordinated proposals for state legislation to require mercury product phase-outs, product bans, disposal bans, labeling, and manufacturer-sponsored collection of mercury-added products;
- mercury clean-outs of schools, dairy farms, hospitals, and dental clinics;
- partnership programs with medical and dental associations to reduce mercury releases from health care facilities;
- thermometer exchanges;
- infrastructure development and expansion in support of source separation programs;
- out-reach and education to the public, municipal, institutional and business sectors.

Although there is much work that remains to be done in this area, these programs have been very successful thus far. Although final tallies of the amounts of mercury collected regionally will not be completed until the end of this year, preliminary information indicates that the state and provincial environmental agencies have collected thousands of pounds of mercury and diverted them from disposal in municipal solid waste.

Some specific examples of regional activities in this area are described in the following sections. In summary, all of the states proposed significant portions of the Model Mercury Education and Reduction Legislation this year, and several were successful in getting legislation enacted. Partnerships between state and provincial environmental agencies and their respective dental and medical associations have been formed and these enabled the states to work closely with these sectors to collect a large of amount of excess mercury and to implement mercury collection and elimination programs. Some of these programs are discussed in more detail in the Dental Sector update that follows. Finally, over 100 kindergarden-through-grade 12 schools in the region have had comprehensive mercury clean-outs with hundreds of pounds of mercury from across the region collected.

Examples of Mercury Collection and Elimination Programs

As noted at last year NEG-ECP meeting substantial amounts of mercury are often present in schools, presenting a serious risk of environmental release and unnecessary exposures to children attributable to inevitable spills and breakage. Spills can also result in expensive cleanups and in school closings. Because of this, the region has undertaken a number of programs to educate school personnel about mercury and to remove mercury from schools. Towards these ends, legislation adopted in New Hampshire, Rhode Island and Maine now bans the use of mercury in schools. Massachusetts' environmental agencies are working

with their state's Department of Education to do the same. Vermont's School Science Lab and Mercury Clean-Out Project has been a major success, with over 625 pounds of mercury collected from 83 participating schools. Massachusetts cleaned out at least 30 high schools and vocational schools in the state this year by working with local government agencies, regional interstate associations, and the operators of the state's municipal solid waste incinerators and anticipates addressing an additional 50 schools in the coming year. These clean-outs have removed hundreds of pounds of mercury from the schools. Connecticut has performed school clean-outs at twenty schools, New Brunswick and Nova Scotia have removed mercury from all of their schools and revised curriculums accordingly, and Prince Edward Island has developed a Mercury Management Plan for Schools.

Connecticut is now well on its way to reaching a goal set by Commissioner Arthur J. Rocque, Jr., of the CT DEP, to collect 2001 pounds of mercury by the end of 2001. A collection of dental mercury held in partnership with the CT State Dental Association in June brought in 412 pounds of mercury. Dentists brought their unused bulk mercury to collection sites in seven cities around the state. When combined with household hazardous waste collections and mercury thermometer exchange events, the total amount of mercury collected by July was 1,837 pounds. Over 50,000 digital thermometers have been distributed and the exchanges will continue through the fall.

Massachusetts has collected over 1,600 pounds of unused bulk elemental mercury from dental offices around the state as part of the first collection effort for this sector, as well as several hundred pounds of additional mercury from thermometer exchanges and municipal collection programs. These programs have been funded through municipal grant programs and through source separation plans being implemented by the state's municipal waste combustors, as required by state regulation. These facilities are investing over one million dollars per year on mercury efforts. Massachusetts has also assisted its municipalities with bulb recycling programs through its municipal grant program and a lower cost state contract for mercury recycling.

Vermont has completed a statewide mercury fever thermometer exchange conducted through its pharmacies. The event was highly successful with about 15 percent of households participating, 33,000 digital thermometers distributed, 45,000 mercury thermometers collected, and 95 pounds of total mercury collected. A total of 111 pharmacies out of 119 in the state participated in the exchange. All of these pharmacies voluntarily pledged to discontinue the sale of mercury fever thermometers. The Maine Departments of Environmental Protection and Agriculture and the State Planning Office have embarked on a program to replace mercury manometers in Maine's dairy industry.

Some examples of mercury elimination efforts in other sectors include a partnership between the Maine Department of Environmental Protection and key health care organizations in the state to promote statewide mercury elimination from Maine's hospitals. As of mid-July, 36 of 38 members of the Maine Hospital Association have signed voluntary agreements to virtually eliminate mercury-containing wastes by 2005. The state has been working with the health care organizations providing educational information and assistance to implement the goals of the partnership program.

Similar efforts are underway in most other states and provinces. For example, Quebec has conducted a survey in hospitals and health-care facilities concerning the use of mercury-containing thermometers and the feasibility of alternative technologies. An action plan is proposed recommending the prohibition of mercury fever thermometers in hospitals and health-care facilities and the safe elimination or disposal of the existing stock. Some establishments have already, on a voluntary basis, eliminated the use of

mercury-containing thermometers. The CT DEP is working in cooperation with the CT Auto Recyclers Association on a voluntary program where auto recyclers will remove and recycle used mercury switches from automobiles. This would prevent mercury from being released when cars with these switches are crushed and shredded, or if the switches corrode with age. A similar project is in progress in Quebec. Stakeholder groups addressing mercury components in automobiles are also meeting in Vermont and Maine. Additionally, many states and provinces have also expanded investments in infrastructure and capacity building projects to improve municipalities ability to implement mercury collection and source reduction programs. For example, Massachusetts and New Hampshire are now providing municipal grants and assistance for mercury product storage sheds and mercury collection programs.

Other Initiatives

Environment Canada and Provinces

The Atlantic Provinces have been actively participating in the Canada-Wide Standard (CWS) process. The Canada-Wide standard process is an initiative being carried out under the auspices of the Canadian Council of Ministers of the Environment (CCME). The approach being undertaken is consistent with the CCME Policy for the Management of Toxic Substances which states that mercury shall be managed through its life-cycle to minimize releases. The national standards developed under the CWS process are endorsed by CCME and implemented by all canadian jurisdictions. The implementation is achieved through various means, including the use of existing legislation by stipulating the standards in the approvals to operate for specific facilities.

Because mercury derived from automobiles is a significant source of potential release when scrap vehicles are recycled, Environment Canada in conjunction with the Ontario Automotive Recyclers Association, Pollution Probe and other partners, has initiated a pilot project for the removal of mercury containing switches in automobiles prior to their recycling. Eleven auto dismantlers will participate in a pilot project to remove and recycle mercury switches between June and October 2001. The results of this project will be used to evaluate the feasibility of expanding the program.

Environment Canada is also implementing a pilot “Take Back” Program for Mercury Fever Thermometers to encourage the public to exchange their mercury thermometers for digital thermometers. This pilot project is scheduled to begin fall 2001.

New Brunswick has introduced a policy for the acquisition of low-mercury and energy efficient flourescent lamps in government buildings. New Brunswick has also supported the replacement of mercury manometers with mercury-free alternatives in one of its regional hospitals.

Federal Facilities Project

NEWMOA, EPA and the MA DEP developed and implemented the first mercury reduction program in the United States addressing medrcury use and management of federal facilities within the region. Participating facilities were audited, alternative products and revised management protocols were recommended and adopted, two mercury workshops were held, many mercury products were recycled, and the final report of the project was produced. A copy of this report is available from NEWMOA.

State Legislation

In the U.S., the states bear a significant responsibility for the management of mercury containing products and waste. In support of the report endorsed at last years NEG/ECP meeting in Halifax, the New England states have all been involved in major legislative efforts designed to reduce mercury releases attributable to products. Some of the key goals of these efforts are to make information readily available to the public about mercury containing products; reduce unnecessary uses of mercury added products where environmentally preferable alternatives exist; and increase the collection of mercury containing products used by consumers. Considerable progress has been made regionally to advance these objectives.

In Connecticut, a bill that included most of the provisions of the Model Mercury Education and Reduction Legislation was introduced by Governor Rowland this year. As proposed, the bill includes a phase-out of mercury products, requires product labeling, bans certain mercury products, requires manufacturer sponsored collection programs, and eliminates mercury from schools.

Governor King of Maine signed a mercury reduction bill this year that requires notification by manufacturers of the mercury content of their products, bans the sale of mercury fever thermometers in the state, requires disclosure of the mercury content of certain products by manufacturers, and requires manufacturers of mercury-containing products to provide hospitals with information on mercury content of their products upon request. This year Maine has also been implementing a mercury labeling law that was passed in the last legislative session.

The Massachusetts House Natural Resources Committee has been reviewing comprehensive legislation that includes most of the provisions of the Model Mercury Education and Reduction Legislation to reduce man-made mercury in the environment. If enacted, the legislation would ban the sale of mercury thermometers in the state without a prescription, hold manufacturers more accountable for better labeling of products that contain mercury, include a phase out and bans, and expand public education and outreach. The legislation was supported by the Governor Jane Swift and state environmental agencies.

The New Hampshire Legislature introduced three bills this year that address mercury in products. HB 645 requires pre-sorting for mercury-containing products from municipal solid waste and HB 655 establishes an advanced disposal fee for mercury-containing products to fund the pre-sorting program. HB 675 proposes labeling and collection requirements, a disposal ban, phase-out provisions, and disclosure provisions for mercury-containing products used in health care facilities. The bill also includes a state procurement provision and provides for equal reimbursement of non-mercury dental fillings by state insurance providers. All three bills were retained in committee, and they will be held over the summer, worked on, and prepared for introduction in the next legislative session.

Rhode Island Governor Lincoln Almond recently signed a comprehensive mercury reduction bill containing most of the provisions of the Model Mercury Education and Reduction Legislation. This legislation will require the phase-out of mercury-added products, labeling, collection plans, bans on certain products, elimination of mercury from schools, and many other provisions.

Vermont Governor Howard Dean submitted a comprehensive bill to reduce mercury in products this year. The bill included provision that if enacted would phase-out mercury-added products, eliminate mercury from schools, ban certain mercury products, require hospitals to develop mercury reduction plans, and many other provisions. This bill was passed by the Senate Natural Resources Committee, and will be reintroduced next year.

EFFORTS TO ADDRESS MERCURY IN THE DENTAL SECTOR

Dental offices have been a significant source of mercury releases into the environment, through wastewater and solid wastes. Traditional dental amalgams contain substantial amounts of mercury, and dental procedures have resulted in considerable waste mercury. The Mercury Action Plan calls upon the region to establish safe handling practices for dental wastes, develop collection programs for mercury from dental offices, better educate dentists and dental workers about mercury and reduce environmental releases of mercury attributable to the dental sector.

Presently, each jurisdiction in New England and Eastern Canada is engaged in efforts to address mercury releases from dental offices. The states and provinces have benefited from an exchange of information on dental programs, building on each others experiences to improve outreach, negotiate agreements with dental societies, and arrange for the collection and safe processing of mercury wastes from this sector. Through programs like the U.S. EPA's Environmental Technology Verification (ETV) program and the Massachusetts Strategic Envirotechnology Partnership, the jurisdictions are also evaluating the effectiveness of mercury capture technologies for dental wastewater. Through their dental programs, particularly when coordinated on a regional basis, the states and provinces can encourage the use of non-mercury amalgams in dental work, increase the recovery of mercury in wastewater, and ensure the proper handling and removal of the recovered mercury.

A key step in developing effective programs for this sector is partnering with the dental community to improve outreach about best management practices for mercury. Prince Edward Island is working with its dental association and Environment Canada to assess the feasibility of a pilot project to collect, monitor and dispose of dental amalgam waste. Newfoundland and Labrador, as well as New Brunswick, are engaged in a similar discussion with their dental association.

Several states and provinces have developed memorandums or letters of understanding (MOUs/LOUs) with their dental association or agencies. These agreements reflect a common set of best management principles for the handling and disposal of mercury. Often they also include commitments to use non-mercury substitutes for traditional amalgam fillings, cooperative work to enhance outreach to the dental community on best management practices, and commitments to reduce the disposal of amalgam waste in wastewater and solid waste.

One of the first dental projects in the region was the memorandum of understanding between Nova Scotia and its provincial dental association. This MOU covers such issues as best management practices for hazardous materials in dental offices, including mercury. The province has also engaged in a coordinated mercury collection program.

Massachusetts' effort has combined education, collection and technology evaluation in an integrated dental program. An MOU between the Massachusetts Dental Association and the Executive Office of Environmental Affairs to promote the use of amalgam separators and educate dentists on mercury issues has been adopted. In partnership with the state dental association and Stericycle, Inc., a program to collect out-of-date elemental mercury was implemented in Massachusetts. This program has recovered over 1,600 pounds of elemental mercury that has been recycled. Massachusetts is also sponsoring an enhanced assessment of the effectiveness of amalgam separators in removing total mercury loadings to wasterwater, in cooperation with the state university and water resources authority. An outreach placard was also devel-

oped on best management practices which is being distributed to all dental offices in the state.

Recognizing the multi-media nature of the dental amalgam issue, Maine has formed a broad-based stakeholder group to help with the development of the state's pollution prevention plan for dental offices. Maine is also developing a brochure to distribute to dentists that will discuss potential health and environmental risks associated with mercury use.

The New Hampshire Department of Environmental Services (DES) has formed a working partnership with the New Hampshire Dental Society (NHDS) and the NH Small Business Development Center (NHSBDC). The partnership will promote the proper management and recycling of mercury-containing wastes and x-ray wastes in dental offices (including compliance with environmental laws and regulations) and encourage the use of non-mercury amalgams. The partnership has developed and conducted a survey to evaluate the level of awareness and degree of mercury amalgam use, recycling, and disposal among NH dentists. Future work will involve the development of educational materials for dentists, dental office staff and patients, and efforts to encourage dental insurance companies to provide equal reimbursement for non-mercury fillings.

Vermont has published a Best Management Practices guide for dentists, in conjunction with the state's dental agency and other organizations. The state also collected about 45 pounds of mercury-containing dental amalgam at a recent meeting of the dental society. Vermont DEC is also working to develop regulatory procedures for dental offices covering mercury handling.

In Connecticut a series of three pick-ups of dental bulk mercury took place in June, with over 400 pounds of mercury collected. Additional pickups are planned. The state also drafted a guidebook for dentists entitled 'The Environmentally Responsible Dental Office', in conjunction with the state dental association and the National Wildlife Federation, which is being distributed to dentists in the state.

Quebec has also been active in this area. The Montréal Urban Community (MUC), representing 28 municipalities in metropolitan Montréal, is responsible for air and water issues in the community. The MUC has worked closely with dentists to develop regulations and programs for dental wastes, which account for over a quarter of the mercury in wastewater in Montréal. According to its regulations, which were adopted by the MUC in August 2000 and go into effect in July 2002, dental offices will be required to install amalgam separators certified ISO-11143 that achieve a 95% or better efficiency in removing particulate mercury.

Rhode Island is currently developing a draft MOU with its dental association which involves the participation of a number of state agencies and other groups. New Brunswick's draft dental LOU includes recycling and collection stipulations, as well as a monitoring effort to assess the amount of mercury in effluents from dental offices.

The Canadian Provinces have also been actively engaged, with Environment Canada, in the Canada-Wide Standards program of the Canadian Council of Ministers of the Environment (CCME). The draft Canada-Wide Standard for dental amalgam is the application of "best management practices " to achieve a 95% national reduction in mercury releases from dental amalgam waste discharges to the environment, by 2005, from a base year of 2000. Best Management Practices are defined as including the use of an ISO certified amalgam trap, or equivalent, and appropriate management of waste so mercury does not enter the environment. It is anticipated that the dental amalgam waste standard will be put forward for approval in

October 2001 at the next scheduled CCME Ministers meeting, pending a final round of consultation with the dental associations and the dental licensing bodies in the country.

In summary, all jurisdictions in our region are actively developing and implementing programs, often in cooperation with their dental associations, to reduce the amount of mercury released into the environment by dental practices. Through these efforts, which include outreach and education, joint public/private partnerships for safe waste handling, mercury collection initiatives and technology assessment, our states and provinces are making significant strides to reduce mercury releases from this source category.

RESEARCH AND MONITORING

Innovative Technologies

The U.S. EPA's Environmental Technology Verification (ETV) program promotes the development of new market-ready environmental and energy technologies through rigorous third-party verification (overseen by the U.S. EPA). For the last three years the New England Governors' Conference, Inc. has served as outreach coordinator for this program in New England. ETV has provided unique opportunities to integrate technology development into regional efforts such as the NEG/ECP Mercury Action Plan, Acid Rain Action Plan, and the proposed Climate Change Action Plan. Mercury continuous emission monitors (CEMs), dental wastewater treatment processes and greenhouse gas mitigation technologies are some of the areas that have been addressed, which have direct application to our region.

Jurisdictional efforts have also contributed to the development and evaluation of important mercury related technologies. Massachusetts has been particularly active in this area supporting two important projects. Through a cooperative agreement with the EPA ETV program Massachussetts helped to develop and supported the implementation of a testing protocol for continuous emission monitors, which if successful will allow mercury emissions control devices to be better evaluated and improve data on overall mercury emissions from point sources. A draft report of the test protocol and results from controlled tests of several technologies is available as a supplement to this report. In addition Massachusetts, through its Strategic Envirotechnology Partnership, has initiated a program to develop an improved testing methodology to evaluate amalgam separators to ensure that are effective in reducing total mercury loadings to wastewater.

Fish And Wildlife Tissue Sampling And Analysis

The consumption of fish containing mercury – as well as the consumption of wildlife that has also eaten the fish – can be a major health threat to our citizens. All jurisdictions in our region have some form of health advisories to alert people when mercury levels in fish may present a health hazard. Particularly at risk are women of childbearing age, young children, and people who eat a large amount of fish and wild game that feed on fish. These can often be rural, immigrant and lower income groups. The *Mercury Action Plan* asks the jurisdictions to "Develop standard protocols for fish and wildlife tissue sampling and analysis to ensure consistent and comparable data. Conduct additional fish tissue monitoring as necessary, and develop a comprehensive database for the Eastern Canadian provinces and New England states".

The Fish Tissue Workgroup, under the direction of the NEG/ECP Mercury Task Force and Committee on the Environment, has prepared a report and matrix of jurisdictional practices related to the collection, handling and testing of fish tissue for mercury levels. The report, available as a supplement to this document, encourages jurisdictions to continue to work together to exchange data on mercury levels in fish in their states and provinces, in order to better assess the deposition and transport of mercury in our region and, most importantly, protect the health of our citizens. While it does not recommend a standard protocol for tissue sampling, it does offer recommendations to facilitate the understanding and exchange of data between jurisdictions.

Underlying these recommendations is the belief of the workgroup that **clarity**, in the design of the sampling program, in the analytical protocols, and in the documentation and reporting of results is critical

not only to the sponsoring jurisdiction, but also to the further distribution and use of this data by other researchers. The matrix of jurisdictional practices that accompanies the report provides a detailed synopsis of the similarities and differences in the sampling programs of the states and provinces. Information includes the purpose for which sampling is undertaken in a jurisdiction, its frequency, seasonality and targeted fish populations, the capture and preparation method for the tissue samples, the analytical techniques used to perform analysis, and data collection and management protocols.

The Fish Tissue Workgroup intends the report and matrix as a starting point for further discussion and cooperation in this area.

Environmental Indicators and Monitoring

In order to evaluate progress in addressing the mercury problem, it is critical that appropriate environmental indicators be identified and tracked regionally. Such indicators will allow information to be collected and analyzed on the effectiveness of our emission reduction, pollution prevention, and outreach and education efforts. Last year, the MTF identified the completion of a regional mercury indicators report as a priority task. Through a collaborative project between the MTF, the U.S. EPA, the Green Mountain Institute and the New England Goals and Indicators Partnership (NEGIP) this task has been completed. The resulting study, *Building Mercury Indicators for the New England Region*, is available as a supplement to this report. It identifies a set of twelve key indicators that can be used to track regional progress in implementing the Action Plan and achieving its objectives. Several additional indicators for are recommended for future consideration and development. Some of the indicators are designed to assess short to intermediate term actions and other longer-term results of regional, national and global mercury pollution reduction initiatives. The indicators identified in this report will assist the MTF in tracking accomplishments, prioritizing efforts, refining and re-adjusting objectives and recommendations, and in communicating progress to the public

A number of the indicators identified in this study are being tracked by the jurisdictions. Extensive efforts are underway regionally to monitor emissions from major mercury sources, quantify the results of pollution prevention programs, assess trends in mercury deposition from the atmosphere, evaluate mercury discharges attributable to wastewater, and measure mercury levels in fish and sediments. Preliminary work has been initiated, with funding from Massachusetts, on a report reviewing regional strategic environmental monitoring efforts. Completion of this study has been identified by the MTF as priority work effort for the coming year. The MTF is also continuing discussions on ways to better manage, integrate and coordinate monitoring and data collection, analysis and dissemination regionally.

EMISSIONS REDUCTIONS STATUS REPORT

The jurisdictions have continued to make substantial progress in reducing mercury emissions from the major sources in the region. Last year the MTF estimated that actions underway at that time would result in a 40% or greater reduction in regional mercury emissions by 2003 using the source inventory presented in the 1998 Northeast States and Eastern Canadian Provinces Mercury Study as a baseline. The MTF believes that the region continues to be on or ahead of schedule and will meet or exceed the MAP interim 2003 emission reduction goal of 50%. Currently the MTF estimates that regional mercury emissions will be reduced between 50% and 55% by 2003. The regional mercury emission inventory will be formally updated next year to allow the region's progress in meeting this goal to be more precisely evaluated.

The stringent mercury emission limits specified in the MAP for municipal waste and medical waste incinerators are being implemented through regulations and permits, using a combination of pollution controls and source separation requirement to remove mercury from waste. Over the past year, municipal waste combustor facilities have installed new state-of-the-art pollution control equipment across the region to address mercury emissions. As a result of these new controls, combined with mercury source separation and source reduction efforts to get mercury out of the municipal waste stream, these facilities are now meeting, and in most cases, exceeding the required emission limits for mercury. This will result in regional reductions in mercury emissions in excess of 85% from this source category. These reductions will be achieved by the end of this year, well ahead of the schedule in the MAP.

Mercury emissions from medical waste incinerators have also been reduced by a similar amount. In response to pending regulations and due to increased awareness of the dangers of mercury emissions, many health care facilities have closed their waste incinerators and are now using alternative sterilization technologies. For example, in New Hampshire implementation of its medical waste incinerator emissions limit has resulted in the closure of 11 of 13 facilities in the state and a 98% reduction in emissions from this source. This has resulted in substantial reductions in regional mercury emissions from this category. Remaining facilities have also reduced emissions through mercury source separation, waste reduction and improved pollution controls.

Other regional sources of mercury emissions are also being addressed. For example, the MTF is working with the Acid Rain Steering Committee to complete a re-assessment of multipollutant control options for boilers, with a focus on mercury. Jurisdictions are moving forward to develop and implement strategies to address mercury emission reduction options and targets presented in last years Joint Boiler Report. For example, this year Massachusetts became the first jurisdiction in the United States to issue stringent multi-pollutant regulations requiring utilities to address mercury as well as emissions of acidifying gases and carbon dioxide. Additionally, as recommended by the MTF, the scope of the MAP was expanded last year beyond air emissions to include wastewater releases of mercury as well. All jurisdictions are addressing such releases through pollution prevention initiatives and discharge limits to reduce mercury inputs from the largest contributing sources including dental offices and the health care sector. Efforts to minimize mercury waste attributable to products will also reduce loadings to wastewater from consumers, municipalities and businesses.

In conclusion, the region remains a world leader in reducing overall mercury emissions and other releases. Although there is much work that remains to be done, substantial and concrete progress has been made towards the MAP ultimate goal of virtually eliminating anthropogenic mercury releases.

MERCURY RETIREMENT

Action item 6 of the Mercury Action Plan, 'Mercury Stockpile Management', seeks to minimize the entry of mercury from existing stockpiles into the commercial marketplace. It calls for advocacy by the NEG/ECP Mercury Task Force and others for the safe management of the U.S. Department of Defense's (DOD) mercury stockpile, as well as other public and private stockpiles. Because of the specific ownership of these stockpiles, particularly that of the U.S. DOD, action on stockpile management has taken somewhat different routes in New England and Eastern Canada.

In New England, agencies of the governors' offices have advocated for the safe retirement of mercury in the U.S. DOD's stockpile. In May 2000, Governor A. Paul Cellucci of Massachusetts, as chair of the New England Governors' Conference, Inc. (NEGC), sent a letter to President Clinton urging the U.S. Environmental Protection Agency to take the lead on identifying and supporting retirement options for mercury. The letter urged federal government agencies – defense, environment and energy – to work together to research and demonstrate the efficacy and feasibility of retirement options. The letter also called for the development of strategies for the interim storage of mercury, pending the availability of permanent storage options. Finally, the NEGC asked for the federal government to take a larger role in the management of mercury in products, and the improvement of national mercury emission inventories.

In May 2001, the NEGC's Committee on the Environment, consisting of the environmental commissioners and secretaries of the six New England states, adopted a resolution regarding mercury retirement and stockpile management. This resolution, addressing the U.S. Department of Defense and the U.S. Environmental Protection Agency, calls upon the U.S. federal government to establish as a national policy the objective of reducing mercury use and releases to the maximum extent feasible and to work together to expeditiously develop a comprehensive strategy to manage and ultimately retire stockpiles of mercury to eliminate the potential for direct or indirect releases into the environment. The resolution requests that the U.S. DOD be prohibited from selling (or otherwise disposing) of its strategic mercury stockpile until such a strategy is completed.

The NEGC Committee on the Environment's resolution goes on to direct the New England members of the Mercury Task Force to continue to work with the federal government and other concerned parties on this issue. This echoes the directive of the New England Governors' Conference, Inc. to its Mercury Task Force representatives in Resolution #152, adopted by the NEGC at its September 2000 meeting.

In Eastern Canada, mercury retirement issues are generally the purview of the federal government (Environment Canada). As alternatives to industrial processes and products which utilize mercury are adopted, there is an increasing pool of mercury in "end of life" products and wastes in the country. Environment Canada recognizes the need to establish policies on the recovery of mercury, the stabilization, sequestration and disposal of stockpiled mercury to reduce its environmental release and associated impacts.

Environment Canada is presently investigating retirement and long-term storage options for mercury, which can be used in the development of a life-cycle management scheme. Options currently being studied include retorting, electro-oxidation, amalgamation, stabilization with other materials (e.g. sulfide or cement), and disposal into contained facilities such as mines and landfills. This work is currently at a preliminary stage. Environment Canada intends to consult with the US EPA as the various options for mercury retirement are evaluated.

YEAR FOUR FOCUS ITEMS

The Mercury Task Force has identified a number of focus items for the coming year, in consultation with the Committee on the Environment. These focus areas are implementation priorities identified by the Committee and the Task Force from the actions specified in the Plan. While work will continue throughout the region on the various aspects of the Mercury Action Plan, the following five areas will stressed.

Joint Boiler Workgroup: Target Re-evaluation and Technology Assessment

The Joint Boiler Workgroup is a partnership of the Acid Rain Steering Committee and the Mercury Task Force to evaluate technology options, develop utility and non-utility boiler emission reduction targets, and explore strategies to achieve multi-pollutant benefits from various control strategies. In the report issued by the group last year and adopted by the Conference of New England Governors and Eastern Canadian Premiers in July 2000, the Workgroup set a goal of a reduction in mercury emissions from coal-fired utility boilers of 20-50% by 2005 and 60-90% by 2010, based on the 1998 regional inventory. The report also requires the Joint Boiler Workgroup to review and either re-affirm or amend these targets by June 2002, after a thorough evaluation of new information, technology developments and federal actions since the Workgroup's initial report was submitted.

This re-evaluation and re-assessment is a necessary precursor to the development of regional and jurisdictional strategies for reducing emissions for utility and non-utility boilers, as called for in action item 12 of the Mercury Action Plan: "… the respective jurisdictions will develop and implement regional strategies to promote maximum economically and technically feasible reductions in mercury emissions from utilities and other boilers in the northeast. The implementation of these efforts should commence within 5 years (by the year 2003)." The Joint Boiler Workgroup, recognizing the technical and economic advantages of a multi-pollutant approach to boiler controls, will continue to include participation from both acid rain and mercury representatives.

Updated Regional Emission Inventory

As the regional mercury project enters its fourth year of implementation, the need for an updated inventory of mercury sources, compatible or at least reconcilable with the base inventory of the Plan, becomes increasingly important. While the Mercury Task Force has been able to estimate with some confidence its progress towards its 50% reduction target in 2003 and the ultimate goal of virtual elimination, a thorough re-assessment of mercury sources and emissions will be necessary, not only to provide the Conference with a firm indicator of the success of the regional mercury effort but also to identify new sources or refine the estimates of emissions from existing sources not captured in the original inventory.

This process will entail the Task Force working closely with the agencies that developed the original inventory – NESCAUM, NEWMOA, NEIWPCC and EMAN – as well as other agencies such as the U.S. EPA and Environment Canada to update the database and refine methodology. Like the original inventory, this process entails considerable work and implies a major dedication of resources by the Task Force and the jurisdicational environmental agencies. While the final revised inventory may not be ready in time for the 2002 meeting of the Conference, it is expected that this effort will be completed in time to present a full evaluation to the 2003 Conference.

Evaluation of the Regional Mercury Monitoring Network, with Recommendations

The inventory of mercury emission sources is an important indicator of regional progress addressing mercury pollution. However, strategic monitoring of other indicators, as identified in the Regional Mercury Environmental Indicators Report completed this past year, are also needed to follow trends in mercury levels in the environment. Over the coming year the MTF will complete a review of the regional mercury deposition monitoring network as well as other environmental monitoring efforts under way in the northeast. This report will form a solid basis for recommendations regarding long-term regional planning in this area and insure that needed, cost effective investments are identified and implemented.

Outreach/Education and Pollution Prevention

The MTF will continue to focus efforts on these critical areas to ensure that the many successful programs that have been initiated in the recent past are effectively implemented. Linkages between outreach and education and mercury source separation and source reduction efforts will be emphasized to leverage progress in each area. School outreach and cleanouts, public education about fish consumption advisories, assistance to municipalities and institutions, and mercury product exchange programs will be continued across the region.

The Task Force will also continue to support the implementation of the "Statement of the Draft Mercury Education ansd Reduction Programs", which was adopted by the NEG/ECP at its meeting in Halifax in July 2000. In the New England states, efforts to adopt and implement legislation to address mercury products (such as the legislative models developed by NEWMOA) will also continue to be a priority. In the Eastern Canadian jurisdictions, these principles will be forwarded through the Canada Wide Standards process. The Task Force will also continue to support and participate in the development and implementation of the regional mercury clearinghouse being developed by NEWMOA.

Research and Innovative Technologies

The MTF will continue to seek opportunities to support innovative technologies to address mercury pollution including methods to assess dental amalgam separator technologies, improved monitoring technologies and alternatives to mercury containing processes and products.